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A Cleaning & Polishing Apparatus for Cleaning, Scrubbing, Waxing, Polishing & Drying

## ABSTRACT

The present invention is to provide a cleaning machine capable of vacuum cleaning, scrubbing, sopping up water and waxing, wherein a downwards stretching suck-in tube is installed towards the front and back of the base, respectively, whereas three sets of rotating shafts are lined up in a row being installed in the middle of the base, a scrubbing disk being attached to a round fixture at the end of the rotating shafts, a motor driving the volute gears of the rotating shafts for driving the three sets of scrubbing disks to rotate, using the rinse water supplied by the rinsing water tank, the pump, and flexible water supply tube, while the dirt and soiled water is sopped up into a soil bag through the suck-in tube, handling stick and flexible water supply tube, and a piece of velvet cloth is attached onto the bottom of the scrubbing disk at an appropriate time to facilitate the waxing process, furthermore to accomplish the goal of the tasks expected.

**A CLEANING MACHINE CAPABLE OF VACUUM CLEANING,  
SCRUBBING, SOPPING UP WATER AND WAXING**

5

**BACKGROUND OF THE INVENTION**

**1. Fields of the Invention**

The present invention refers to a cleaning machine capable of vacuum cleaning, scrubbing, sopping and waxing, particularly the kind of device capable of 10 performing vacuum cleaning, scrubbing, and sopping up soiled water at the same time, or performing waxing individually at an appropriate time.

Ever since scientific technology came into our world along with civilization, the extent of its influence has been far-reaching in many areas, such as industry, economy, national defense, transportation, communication, and material life, etc., 15 particularly in the aspect of our material life where the influence of technology is even far more significant, since it helps us out with many dreary and tedious chores, such as the inventions of dryers, washers, cleaning machines, waxing machines, vacuum cleaners, and so forth, for the purpose of raising the quality of life and improving our living environment.

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**2. Description of Prior Art**

The cleaning machines of the prior art, if classified by features, can be divided into a few types: simple floor scrubbing type, vacuuming and scrubbing type, vacuuming, scrubbing, and sopping type, and, the three-in-one plus waxing type. 25 Among them, the vacuuming, scrubbing, and sopping type turns out to suit best for

residential or office buildings. However, this type of cleaning machines uses single scrubbing disk, and because the scrubbing disk is very large in diameter, the whole set of machine becomes huge, making it very inconvenient to use, and if the scrubbing disk is made smaller, the overall operation efficiency of the machine is 5 reduced accordingly. Furthermore, the way this vacuuming, scrubbing, and sopping type of cleaning machine sops up soiled water uses a fan motor in collocation with a sponge or scraper for sopping up soiled water on the floor and through the tubing into a soiled water bag. The problem lies in the poor design of the suck-in tube to such an extent that the effect of sopping is far from being 10 perfected. Moreover, the scrubbing disks, when rotating, even fling the soiled water around, making the area of the floor already cleaned dirty again.

Furthermore, the cleaning machines of the prior art need to be built with a rinse water tank and a soiled water tank, both being of the same capacity, in order to store the rinsing water and soiled water; namely, prior to the operation of the 15 machine, the rinse water tank is filled with rinse water, while the soiled water tank is empty, and then with the machine operation time increasing, the level in said rinse water tank gradually becomes lower, while the level in soiled water tank gradually becomes higher; this fact keeps the prior art confined to a limit and unable to do away with the structure of rinse water tank and the soiled water tank, 20 resulting in the fact that these mobile rinse water and soiled water tanks are so bulky that they take up most of the space of the machine while making the machine difficult to operate.

In viewing the above-mentioned drawbacks of the prior art, the inventor of the present invention had aimed at the real cause of the problem and started working 25 on the improvements, and, after intensive study and much analysis, the result is the

present invention of a cleaning machine capable of vacuum cleaning, scrubbing, sopping up water and waxing.

## **SUMMARY OF THE INVENTION**

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The main object of the present invention is to provide a cleaning machine capable of vacuum cleaning, scrubbing, sopping up water and waxing, which can perform vacuum cleaning, scrubbing, and sopping up soiled water at the same time, or perform waxing individually at an appropriate time, while every step throughout 10 the whole process is carried out very effectively, thus making it very helpful for the machine operators.

The techniques and methods applied in the present invention for the purpose of achieving the objects aforesaid, as well as its features, to be explained below in details, are an example of the preferred embodiment of the present invention with 15 reference to the drawings, so that the devices applied in the present invention can be made more easily understood for the examiners.

## **BRIEF DESCRIPTION OF THE DRAWING**

20 Figure 1 illustrates the lateral view on the composition of the preferred embodiment of the present invention.

Figure 2 illustrates the cutaway view on the composition of the preferred embodiment of the present invention.

Figure 3 illustrates the cutaway view by the cutting line A ~ A' on the 25 composition of the preferred embodiment of the present invention.

Figure 4 illustrates the 3-D cutaway view on the rinsing water tank set of the preferred embodiment of the present invention.

Figure 5 illustrates the diagram on the motions of the preferred embodiment of the present invention.

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## **DETAILED DESCRIPTION OF THE INVENTION**

First, please refer to Figure 1: the lateral view on the composition of the preferred embodiment of the present invention. The present preferred embodiment 10 comprises the following components: a base 1, a case 2, a driving device 3, cleaning utensils 4, a handling stick 5, a rinse water tank 6, a soiled water bag 7, a pumping device 8, and a water supply device 9, in order to perform vacuum cleaning, scrubbing, and sopping up soiled water at the same time, or perform waxing individually at an appropriate time.

15 Next, please refer to Figure 2: the cutaway view on the composition of the preferred embodiment of the present invention. The base 1 of the present preferred embodiment is a rectangular board, a lower case 22 which is hollow inside being mounted and fastened on the said base 1, by means of fastening parts, a drive motor 31 of the drive device 3 being fastened on the top side of the lower case 22 at the center, the motor being installed with a decelerating box, its output shaft running through and into the lower case 22, and being joined with a volute gear 32, wherein said volute gear 32 being geared with one identical volute gear 32 on each side, the rotating shafts of these volute gears 32 all running down through the base 1, and being installed with bearings, a round fixture 41 for fixing cleaning utensils 4 20 placed at the end of each rotating shafts, said round fixture 41 being installed with

a downwards stretching hollow tube 42 at its center, and said hollow tube 42, at the lower section toward the end, being made into bulging spherical shape, with incisions made to it to form several vertical grooves, so as to make the hollow tube 42 of the plastic one-piece round fixture 41 elastic, then the hole at the center of the  
5 scrubbing disk 43 being pressed into the hollow tube 42 to allow the scrubbing disk 43 to be placed on top of the hollow tube 42, the two grooves running diametrically on top of the scrubbing disk 43 being inset into the raised bar at the opposite location on the round fixture 41, allowing the motor to drive the rotating shafts, the round fixtures 41, and the three scrubbing disks 42, through the volute gears 32,  
10 making them all rotate at the same time, thus performing the scrubbing of the floor.

The present preferred embodiment has a drum-shaped one-piece inner case 23 being placed inside the upper case 21 at the center and covering around the motor, the upper case 21 and drum-shaped inner case 23 having soft rubber rings attached at the ends, to ensure close and tight contact with the lower case 22, the upper and  
15 the lower cases 21, 22 being joined with fastening parts, so that the enclosure confined between the inner wall of the upper case 21 and the outer wall of the drum-shaped inner case 23 forms a pumping chamber. Said upper case 21 is built with a guiding tube 24 towards the back which extends out a section, wherein the tube being hollow inside and connected with the pumping chamber, so as to form  
20 the pumping pipe line, another hollow tube 25 being installed over the surface of the guiding tube 24, whereas said hollow tube 25 being through the wall of upper case 21, and further connected with the drum-shaped inner case 23, serving as the pipe line for the motor power supply cord and water supply; the handling stick being hollow, and being connected with the guiding tube 24 in the upper case 21  
25 through pipefitting, so as to form the pumping pipe line, another hollow tube 61

also being installed over the surface of the handling stick 5, so as to serve as the pipe line for power supply cord and water supply.

Please further refer to Figure 4: the 3-D cutaway view on the rinsing water tank set of the preferred embodiment of the present invention. The present 5 preferred embodiment has a rinse water inlet and a soiled water inlet installed at the top of the rinsing water tank 6, a rinse water outlet and a soiled water outlet installed at the bottom of the rinsing water tank 6, and a spherical valve installed on the guiding tube 61 of the soiled water outlet. Said soiled water bag 7 is made of PE plastics with one-piece forming, wherein the top and bottom of the soiled water 10 bag 7 being flanged, and the flanges 71, 72 being adhered and fastened around the inlet and outlet of the rinse water tank, and the soiled water bag 7 being made corrugated around the outside to allow stretching and expanding.

The pumping device 8 of the present preferred embodiment uses a fan motor 81 as the drive force, said fan motor 81 having its ring-shaped supporting rack 82 15 being fastened at the entrance of the soiled water inlet of the rinsing water tank 6, the flexible tube jointed around the ring-shaped supporting rack 82 being further connected to the control valve on top of the handling stick 5, so as to make the pumping chamber, guiding tube 24, handling stick 5, flexible tube 83 and soiled water bag 7 in the upper case 21 all link together.

20 There at the rinse water outlet of the rinsing water tank 6 is installed a pump 91 as the device for water supply 9, the water supply soft tube 93 at the pump outlet then sequentially running through the hollow tube 51 of the handling stick 5, the hollow tube 25 of the guiding tube 24, drum-shaped inner case 23, and into the lower case 22, stretching along the wall of the lower case 22, then, by means of a 25 T-shape pipefitting, splitting into two water supply tubes 94, each of these two

water supplying tubes 94 individually coming out downwards from the round hole of the base 1, aiming at the areas in front of the overlapped areas formed by the three sets of scrubbing disks 43, allowing the rinsing water delivered onto the floor in front of the scrubbing disks 43, to facilitate the scrubbing process, whereas a 5 control valve being installed on the water supply soft tube 93 towards the upper section of the handling stick 5, for the purpose of adjusting the water volume.

Please see Figures 2, 3 and 5 for reference. The pumping device 8 of the present preferred embodiment has a downwards stretching and sideways running suck-in tube 84 installed towards the front and back of the base of the machine, 10 respectively, and fastened with pressing board or fastening parts, the front and back walls of the lower section of said suck-in tube 84 being vertically straight, but then gradually wider apart, and eventually stretching outwards horizontally, the two suck-in tubes 84 having a diaphragm plate made by one-forming connected to each of the right and left ends, to enclose the three sets of scrubbing disks 43 in it. Said 15 suck-in tube 84, being made out of flexible rubber and thus elastic, makes close contact with the surface of the floor. The front and back walls of the suck-in tube towards the lower section are built with a couple of vertical raised bars 86 with equal spacing, so that when the tube is driven forwards while clinging to the surface of the floor, the bottom of the front wall of said suck-in tube will be kept a 20 little distance from the surface of the floor, as shown in Figure 5, so as to significantly improve the sucking effect. The two suck-in tubes in said base 1 have a hole at the center, respectively, while there are straight tubes 26 in the lower case at corresponding locations, stretching downwards, with the end of the straight tubes 26 being connected with soft rubber rings, so as to ensure close and tight contact 25 against the base 1 to prevent the air from venting out.

In the present embodiment, when performing vacuum cleaning, floor scrubbing and water sopping, firstly, the rinsing water tank 6 is filled to full level with rinse water, while the soiled water bag 7 is empty, thus making the best use of the volume rate, and then the fan motor 81, pump 91 and motor 31 are turned on,

5 the power switch of said motor 31 being installed in the upper section of the handling stick 5, wherein its power supply cord being attached on the flexible water supply tube 93, at this time with the operator pushing the machine forwards by the handling stick 5, the bottom of the back wall of said suck-in tube 84 being clinging to the surface of the floor, while the bottom of the front wall, owing to the

10 presence of vertical raised bars 86, will be kept a little distance from the surface of the floor, thus forcing the dust and dirt on the floor to be sucked in, through the suck-in tubes 84, straight tubes 26, pumping chamber, guiding tube 24, handling stick 5 and flexible tube 83, and into the soiled water bag 7, wherein filtering materials (filtering screen and sponge) being installed at the entrance to the fan

15 motor 81; on the other hand the motor 31 being driving the three sets of rotating shafts to rotate, with the feeding of the rinsing water, to scrub the floor rapidly, and immediately afterwards, another suck-in tube 84 being sopping up soiled water and dirt on the floor into the soiled water bag 7. With sequential operation this way, the water level in the rinse water tank 6 gradually lowers, while soiled water gradually

20 fills up the soiled water bag 7, making the soiled water bag 7 expanding, and the operation need not stop until rinsing water is used up and soiled water is full, and operation will not resume until after rinsing water is filled again and the soiled water is dumped.

After cleaning is completed, if waxing is needed, the pumping device needs to  
25 be turned off, and the rinsing water tank will be filled with fluid wax, while the

comb end of each scrubbing disk 43 is attached with a piece of thick velvet cloth 44, with the pointing stick of the plugging disk 45 being inserted through the hole at the center of the thick velvet cloth 44, and pressed into the opening of the hollow guiding tube 42 on the round fixture 41, taking advantage of the effect of its 5 elastically clamping to keep the thick velvet cloth 44 from falling off, while the thick velvet cloth 44, owing to being pointed through by the brushes of the scrubbing disks 43, being able to rotate along, thus facilitating the process of waxing.

In conclusion, the present invention of "a cleaning machine capable of 10 vacuum cleaning, scrubbing, sopping up water and waxing" is indeed capable of simultaneously performing vacuum cleaning, scrubbing, and sopping up soiled water, or performing waxing individually at an appropriate time, while the overall performance of its functions of vacuum cleaning and water sopping have also been improved significantly; besides, the space taken up by the rinsing water tank and 15 soiled water tank of the prior art can be significantly reduced. Therefore, seeing that the present invention truly bears the quality of practicability, while also meeting the criteria of filing for patent grant, the inventor hereby would like to have the application duly set forth.

## CLAIMS

1. A cleaning machine capable of vacuum cleaning, scrubbing, sopping up water and waxing, comprising:
  - a base, being a rectangular board;
  - 5 a case, being divided into upper, and lower cases which are hollow inside, lower case being mounted and fastened on top of the base, while upper case being built with guiding tubes extending outwards;
  - 10 a driving device, wherein a motor which contains a decelerating box is mounted and fastened onto the center of the top side of the lower case, whereas the output shaft being through and being inside the lower case and joined with a volute gear, for gearing one volute gear on each side of the volute gear, the rotating shafts of these volute gears all being through the base, and installed with bearings;
  - 15 three sets of cleaning utensils, wherein round fixtures are mounted and fastened at the ends of the rotating shafts, respectively, and then mounted with scrubbing disks which contains brushes;
  - 20 a handling stick, being hollow and jointed with the guiding tubes in the upper case, another hollow tube being installed on the outside of the handling stick, in order for the power supply cord of the motor to run through, and for a power supply switch to be installed;
  - a rinsing water tank, wherein a rinse water inlet and a soiled water inlet are installed at the top of it, and a rinse water outlet and a soiled water outlet being installed at the bottom of it, while a spherical valve being installed on the tubing of the soiled water outlet;
  - 25 a soiled water bag, wherein its top and bottom are open ends;

a pumping device, wherein the ring-shaped supporting rack of the fan motor is fastened at the entrance of soiled water inlet of the rinsing water tank, and the flexible tube jointed around the ring-shaped supporting rack is further connected to the control valve at the open end on top of the handling stick;

5           a water supply device, wherein the pump is installed and fastened at the rinse water outlet of the rinsing water tank, the water supply soft tube being extending from the pump outlet, through the hollow tube of the handling stick, connected to a control valve, then into the upper and lower case, then splitting into two water supplying pipes, while coming out from the two round holes, 10 respectively, on both ends of the base;

             featuring the following: a drum-shaped inner case being installed inside said upper case at the center for covering around the motor, the upper case and the drum-shaped inner case being connected with soft rubber rings at the bottom end, respectively, making sure of the joint between the upper and 15 lower cases being close and tight, so that the enclosure confined between the inner wall of the upper case and the outer wall of the drum-shaped inner case forms a pumping chamber, while the guiding tubes of the upper case are connected with the pumping chamber, and the one-piece hollow tube outside the guiding tube is through the wall of the upper case, while connected with the drum-shaped inner case, so as to serve as the pipe line for the motor power supply cord and the water supply soft tubes; a downwards stretching and sideways running suck-in tube being installed towards the front and back of the base of the machine, respectively, the front and back walls of the suck-in 20 tube towards the lower section being built with a couple of vertical raised bars with equal spacing, the case having two round holes installed between the two

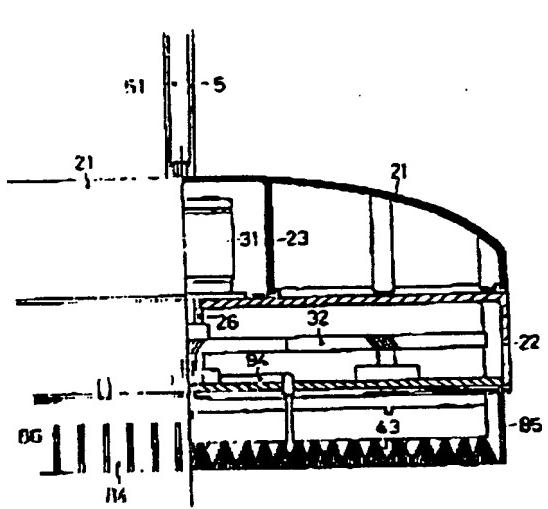
suck-in tubes at opposite locations, so as to correspond to the downwards stretching straight tube of the lower case at the corresponding locations, as well as the soft rubber rings joined at the bottom, thus connecting with the pumping chamber, sopping up particles, dust and dirt into the soiled water bag, the soiled water bag being placed inside the rinsing water tank, its top and bottom being made into flanges, which being adhered around the inlet and outlet of the rinse water tank; the round fixtures for said cleaning utensils having downwards stretching hollow tubes installed at the center, the lower section of said hollow tube being made into bulging spherical shape, with incisions made to form several vertical grooves, so as to allow the scrubbing disks to be pressed, by the hole at its center, into the upper section of the hollow tube, the two grooves running diametrically on top of the scrubbing disk being inset into the raised bar at the corresponding location on the round fixture, making the scrubbing disks and the rotating shafts able to rotate as one, the two water supply tube running through the base then aiming at the areas in front of the two overlapped areas formed by the three sets of scrubbing disks, for delivering the rinse water, so as to facilitate the processing of vacuum cleaning, scrubbing, and sopping up water at the same time.

2. The cleaning machine capable of vacuum cleaning, scrubbing, sopping up  
water and waxing, as claimed in Claim 1, wherein the front and back walls of  
the two suck-in tube in the lower section are vertical and parallel to each other,  
but gradually widening apart towards the upper section, and eventually  
stretching outwards horizontally, while the tube is secured by pressing board  
and fastening parts on the top of the base, and said two suck-in tubes are  
made of soft rubber, and linked at both ends with bar type diaphragm, to

enclose the three sets of scrubbing disks.

3. The cleaning machine capable of vacuum cleaning, scrubbing, sopping up water and waxing, as claimed in Claim 1, wherein said soiled water bag is made of PE plastics and formed in one piece, and the soiled water bag made  
5 corrugated around the outside to allow stretching and expanding.
4. The cleaning machine capable of vacuum cleaning, scrubbing, sopping up water and waxing, as claimed in Claim 1, wherein the brush ends of said cleaning utensils are able to allow a piece of thick velvet cloth to be attached to them, the pointing stick of the plugging disk is then inserted through the  
10 hole at the center of the thick velvet cloth, and then pressed into the opening of the hollow guiding tube on the round fixture, for the purpose of performing waxing.

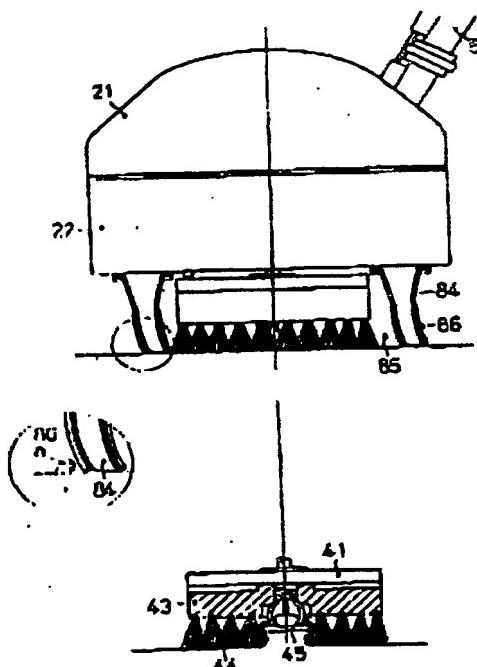
(3)



第 3 図

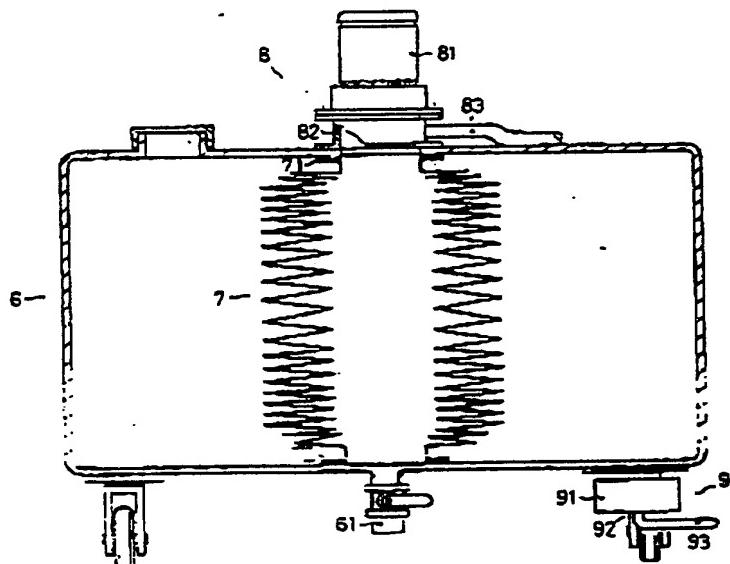
Fig. 3

taken along Line A-A  
of Fig. 2



第 5 図 Fig. 5

Showing the State of Use



第 4 図

Fig. 4 : Cross - Sectional View  
of the Clean Water Container

(44)中華民國78年(1989)11月21日  
新 型

(51)Int.Cl.: A47L

全 3 頁

(54)名稱：具吸塵洗地吸水打蠟功能清潔機

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## (57)申請專利範圍：

1. 一種具吸塵洗地吸水打蠟功能清潔機，係包括：

一機庫，為一長方形板狀；

一機殼，係分為內部中空之上、下機殼，下機殼套置鎖設於機座上，而上機殼後端製有往外突出之導管；

一驅動裝置，其具有減速箱之馬達係鎖設於下機殼之頂面中央處，而輸出軸則穿入下機殼內，並結合一螺旋齒輪，在螺旋齒輪左右側各啮合一螺旋齒輪，彼等之轉軸皆貫穿機座，並以軸承相樞設；

三組清潔器具，其固定盤各套固於轉軸底端，再各套設一具有刷毛之刷盤；

一握桿，係為中空狀態，並與上機殼之導管相接合，在握桿表緣設有另一中空管，以供馬達之電源線穿入並裝設開關；

一清水箱，其頂緣設有清水入口及污水入口，底緣則製有清水出口、污水出口，並於污水出口管上裝設一球型閥；

一污水囊，其下上端皆為開口狀態；

一抽吸裝置，其風扇馬達之環形托架鎖設於清水箱之污水入口處，而環形托架周側接合之軟管則接至握桿頂端開口處之控制閥；

一供水裝置，其泵浦鎖設於清水箱之污水出口端，而泵浦出口端之供水軟管則穿入握桿之中空管，並接合一控制閥，再

進入上、下機殼內且分歧為兩供水管，而各自機座之兩圓孔往下穿出；

其特徵在於：該上機殼內部中央處設製一體之圓筒形內殼，以單設於馬達周側，而上機殼與圓筒形內殼之底端緣皆結合有軟質橡膠環，使上、下機殼鎖合處確實緊密，既上機殼內壁與圓筒形內殼外壁之間形成一抽吸室，而上機殼之導管即與抽吸室相接通，在導管表緣一體之中空管則貫穿上機殼之殼壁，並與圓筒形內殼相接通，以作為馬達電源線及供水軟管之管路；在機座底面前後處各設置一道左右向往下延伸之吸入管，吸入管之下半段前後壁各製有等間距之縱向凸條，而機座於兩吸入管中間之相對處各設製一圓孔，以配合下機殼相對處往下延伸之直管暨其底端所結合之軟質橡膠環，而與抽吸室相接通，將塵屑、污水抽吸至污水囊內，污水囊係置入於清水箱內，其上下端開口製有往外突出之凸緣，以各黏貼膠著於清水箱之污水入、出口周側，該清潔器具之固定盤中央處設有往下延伸之中空導筒，而中空導筒之下半段周緣製成突出之球面，並切製數道縱向槽溝，以將刷盤中心孔壓進套設於中空導筒之上半段，而刷盤頂面徑向相對處之兩凹溝則與固定盤相對處之長條形凸緣相互嵌合，使刷盤能與轉軸一體旋轉。

，而兩貫穿機座之供水管出口端則對準三組刷盤所形成兩交接處之前方，以便送清水，藉能同時進行吸塵、洗地及吸水作業者。

2. 如申請專利範圍第1項所述之具吸塵洗地吸水打蠟功能清潔機，其中，該兩吸入管下半段之前後壁係垂直平行狀態，而上半段則漸次往上增寬，再往外水平延伸，俾以壓板抵壓並用鎖固元件以鎖設於機座底面，該兩吸入管採用軟性橡膠製成，並且於兩吸入管左右端各以長條形之肋片加以連結，而將三組刷盤予以包圍者。

3. 如申請專利範圍第 1 項所述之具吸塵洗地吸水打蠅功能清潔機，其中，該污水囊採用 PE 塑膠一體製成，而污水囊周緣成連續之大型皺摺狀，以能彈性伸縮、

底服者。

4. 如申請專利範圍第1項所述之具吸塵洗地吸水打蠅功能清潔機，其中，該清潔器具之刷毛端能貼置一厚絨布，再將絨盤頂面之凸柱穿入厚絨布中心孔，接著壓擠入固定盤之中空導筒開口內，以進行打蠅作業者。

### 圖示簡單說明：

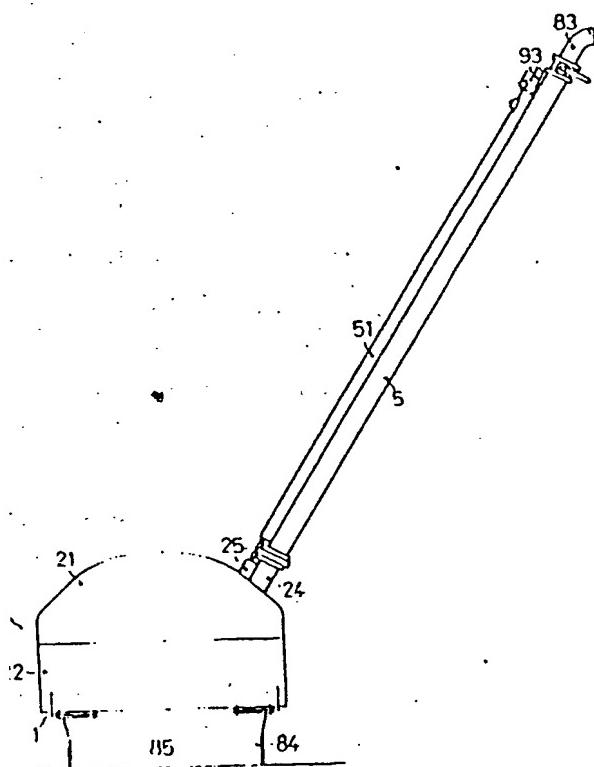
## 第1圖係本創作實施例之組合剖視圖。

第2圖係本創作實施例之組合剖視圖。

第3圖係沿第2圖A-A'之組合剖視圖。

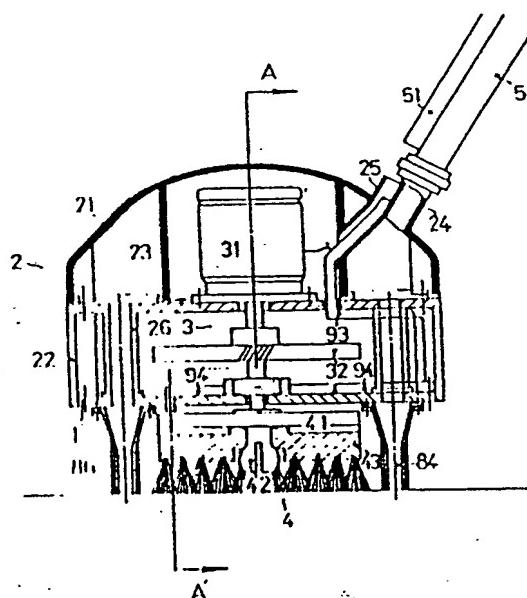
第4圖係本創作實施之清水箱組立剖視圖。

#### 第5圖係本創作實施之動作示意圖。



卷一

Fig. 1 Side View



第 2 回

Fig. 2 Cross-Sectional View

Pat. Pub. No. / 23375

申請日期	78. 3. 24
案 號	7820260P
類 別	A47L

公 告 本

(以上各欄由本局填註)

發明  
新型 專利說明書

一、發明 創作	具吸塵洗地吸水打蠟功能清潔機	
二、發明 創作人	姓名 (國籍)	呂文祺 中華民國
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	代表人 姓 名	78. 6. 29

發明之名稱：具吸塵洗地吸水打蠟功能清潔機

四、發明摘要：(請以簡明之文字敘述其中專利內容之特點)

本創作係提供一種具吸塵洗地吸水打蠟功能清潔機，其主要在機座底面前後處各設置一道往下延伸之吸入管，而機座中段處則樞設左右直線排列之三組轉軸，在轉軸底端之固定軸乃套固嵌合一刷盤，藉由馬達驅動轉軸螺旋齒輪使三組刷盤旋轉，並配合清水箱、泵浦及供水軟管所輸至之清水以清洗地面，而地面之塵粒、污水則經由吸入管、握桿及軟管以抽吸至污水囊，在刷盤之底面亦可適時貼置一層絨布，以適合打蠟作業，進而達到預定之工作目的者。

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附註：本審已向

國(地區)申請專利，申請日期：

案號：

五、發明說明(本欄應載明有關之先前技術，發明或創作之目的，技術內容、特點及功效，使熟習技術者能了解其內容並可據以實施)

本創作係有關一種具吸塵洗地吸水打蠟功能清潔機，尤指一種能同時進行吸塵、洗地及吸水作業，亦可適時單獨實施打蠟作業之裝置者。

自從科技伴隨著文明闖入我們世界後，它影響之層面幾乎無所不包，例如：工業、經濟、國防、交通、通訊及物質生活等，其中尤以對人們之物質生活影響最為顯著，因

為它可以代替人們解決甚多麻煩、瑣碎之雜事，如烘乾機、洗衣機、清潔機、打蠟機及吸塵器等，以提高人們之生活品質與改善生活環境。

按，習用清潔機依其功能區分，合計有單純洗地型、吸塵洗地型、吸塵洗地吸水型、兼具打蠟型等種類，其中尤以吸塵洗地吸水型較適合大型住宅、辦公室等場所使用，該吸塵洗地吸水型清潔機皆採用單一刷輪，由於刷輪之直徑甚大，以致整組機體過於龐大，不便於操作使用，若係將刷輪之直徑予以大幅縮減，則相對的減低整體操作效率；再者，該吸塵洗地吸水型清潔機之吸水方式係採用風扇馬達動作由拂刷或刮板，以將地面之污水經由管路吸至污水箱，惟因其吸入口之設計欠缺完善，以致吸水效果未臻至善，何況刷輪於旋轉時，亦會將污水自左右側甩出，而沾污已清潔後之地面。

再者，習用清潔機須具備同等體積之清水箱、污水箱，以貯納清水、污水，既使用前清水箱內貯滿清水，而污水箱為中空狀態，然後隨著使用時間之增長，該清水箱之液位漸減，污水箱之液位漸增；由於此項事實無法改變，並且習用清潔機亦不能擺脫清水、污水箱之構造範疇，以致移動式清水、污水箱之體積過於龐大，不僅甚為佔用空間，並且不便於操作使用。

本創作之創作者有鑑於上述習用清潔機之使用缺失情形，因此乃針對其缺失癥結所在，開始著手加以謀求改善，補其所缺，經過無數次探討、研析，終而創出本創作「

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具吸塵洗地吸水打蠟功能清潔機」。

而本創作之目的，即在提供一種具吸塵洗地吸水打蠟功能清潔機，其能同時進行吸塵、洗地及吸水作業，亦可適時單獨實施打蠟作業，而整體動作則皆極為確實，並且能大幅減輕清潔、污水箱之所佔空間，俾於實際操作使用者。

有關本創作為達成上述目的，所採用之技術手段及其功效，茲舉一可行實施例並配合圖示詳述如下，俾使審查委員對本創作之裝置更易於瞭解。

#### 圖示簡單說明：

第 1 圖 原木創作實施例之組合側視圖。

第 2 圖 係木創作實施例之組合剖視圖。

第 3 圖 沿第 2 圖 A ~ A' 線之組合剖視圖。

第 4 圖 係木創作實施例之清水箱組立剖視圖。

第 5 圖 係木創作實施例之動作示意圖。

首先，請參閱第 1 圖：本創作實施例之組合側視圖。本實施例係由機座①、機殼②、驅動裝置③、清潔器具④、振拌⑤、清潔箱⑥、污水囊⑦、抽吸裝置⑧及供水裝置⑨等所組成，以同時進行吸塵、洗地及吸水作業，亦可適時單獨實施打蠟作業者。

請參閱第 2 圖：本創作實施例之組合剖視圖。本實施例之機座①為一長方形板狀，在機座①上套置一內部中空之下機殼②，並採用鎖固元件加以鎖設，而驅動裝置③之馬達⑩係鎖固於下機殼②之頂面中央處，馬達⑩附設減速

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箱，其前由軸則穿入下機殼②內，並結合一螺旋齒輪③，而螺旋齒輪③之左右側各嚙合傳動一相同之螺旋齒輪③，彼等螺旋齒輪③之轉軸皆往下貫穿機座①，並採用軸承加以軸承，  
在軸之底端各套固一清潔器具④之固定盤④，該固定盤④中央處設置有往下延伸之中空導筒④，而中空導筒④之下半段周緣則製成突出之球面，並切製數道縱向槽溝，以使塑膠一體成型之固定盤④中空導筒④具有彈性，再將刷盤④之中心孔壓進套設於中空導筒④上，而刷盤④頂面徑向相對處之兩凹溝則與固定盤④相對處之長條形凸緣相互嵌合，使馬達③能經由螺旋齒輪③、轉軸及固定盤④而帶動三組刷盤④同時旋轉，以進行清洗地面作業。

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本實例之上機殼②內部中央處設置一體成型之圓筒形內殼③，以單設於馬達③周側，而上機殼②與圓筒形內殼③之底端緣皆結合有軟質橡膠環，以與下機殼②緊密接觸，並採用鎖固元件將上、下機殼②②相鎖設結合，既上機殼②內壁與圓筒形內殼③外壁之間形成一抽吸室。該上機殼②後端製有往外突出一截之導管④，其內部為中空狀態並與抽吸室相接通，以形成抽吸管路，在導管④表緣亦設有另一中空管⑤，而中空管⑤係貫穿上機殼②之殼壁，進而與圓筒形內殼③相接通，以作為馬達③電源線及供水之管路；而握桿⑥係為中空狀態，並採用管接頭以接合上機殼②之導管④，以形成抽吸管路，在握桿⑥表緣亦設有另一中空管⑤，以作為電源線及供水之管路。

請參閱第4圖：本創作實施例之清水箱組立剖視圖。

本實施例之清水箱(6)頂緣設製清水入口及污水入口，而清水箱(6)底緣則設有清水出口及污水出口，在污水出口之導管(8)上裝設一球型閥。該污水囊(7)係採用PE塑膠一體成型，在污水囊(7)上下製有往外突出之凸緣(11)(12)，並各黏貼膠著於清水箱(6)之污水入、出口之周側，再採用鎖固元件加以鎖設結合，而污水囊(7)周緣則製成大型皺摺狀，以具有伸縮、膨脹之特性。

本實施例之抽吸裝置(8)係採用風扇馬達(81)作為動力來源，該風扇馬達(81)之環形托架(82)鎖設於清水箱(6)之污水入口處，而環形托架(82)周側接合之軟管(83)則接至握手(5)頂端之控制閥，以使上機殼(21)抽吸室、導管(24)、握手(5)、軟管(26)及污水囊(7)相接通者。

在清水箱(6)之清水出口端裝設供水裝置(9)之泵浦(91)，而泵浦(91)出口端之供水軟管(93)則依序穿入握手(5)中空管(51)、導管(24)之中空管(25)、圓筒形內殼(23)，再進入下機殼(22)內，並沿著下機殼(22)之殼壁貼附延伸，然後藉由三通接頭以形成兩供水管(94)，再將兩供水管(94)各自機座(1)之圓孔往下穿出，並且各自對準三組刷盤(43)所形成兩交接處之正前方，以利清水箱送至刷盤(43)前方之地面上，俾於進行清洗作業，而供水軟管(93)於握手(5)上段處裝設一控制閥，以調整供水量之大小。

請參閱第2、3、5圖，本實施例抽吸裝置(8)係於機座(1)底面將復底板各設置一道左右向往下延伸之吸入管(84)並藉由壓板、鎖固元件加以鎖設，該吸入管(84)下半段之前後

壁係垂直狀態，然後漸次往上增寬，再往外水平延伸，而兩吸入管喇叭左右端則結合一體成型之肋片<sup>⑮</sup>，以將三組刷盤<sup>⑯</sup>納於其中。該吸入管<sup>⑭</sup>係採用軟性橡膠製成，以具有伸縮彈性，而與地面相接觸。在吸入管<sup>⑭</sup>下半段之前後壁各製設等間距之縱向凸條<sup>⑯</sup>，使其於貼地面往前移動時，該吸入管喇叭前壁底端與地面相隔一段間隙，如第5圖之前頭a所示，以顯著提高抽吸效果。該機座<sup>①</sup>於兩吸入管<sup>⑭</sup>之中間及各裡製一圓孔，而下機殼<sup>⑫</sup>之相對處則製有往下延伸之直管<sup>⑮</sup>，在直管<sup>⑮</sup>底端係結合軟質橡膠環，以與機座<sup>①</sup>緊密抵觸而防止洩氣。

本實施例於進行吸塵、洗地、吸水作業時，首先將清水注滿於清水箱<sup>(6)</sup>內，而污水囊<sup>(7)</sup>內為無水狀態，以發揮清水箱<sup>(6)</sup>之容積率，接著啟動風扇馬達<sup>(8)</sup>、泵浦<sup>(9)</sup>及馬達<sup>(3)</sup>，該馬達<sup>(3)</sup>之間關裝設於握桿<sup>(5)</sup>上段處，其電源線則依附於供水管管軸上，此時操作者將握桿<sup>(5)</sup>往前推移，則吸入管<sup>⑭</sup>喇叭外端即貼於地面，前壁底端乃因縱向凸條<sup>⑯</sup>而與地面相隔一段間隙，俾將地面之塵屑強制抽取，經由吸入管<sup>⑭</sup>、直管<sup>⑮</sup>、抽吸室、導管<sup>⑯</sup>、握桿<sup>(5)</sup>、軟管<sup>⑰</sup>以抽吸至污水囊<sup>(7)</sup>內，其風扇馬達<sup>(8)</sup>之入風口裝設有過濾器（濾網及海綿）；另一方面馬達<sup>(3)</sup>驅使三組刷盤<sup>⑯</sup>旋轉，並配合清水之噴灑，以迅速清洗地面，緊接著另一道吸入管<sup>⑭</sup>即將地面上之污水、污塵抽吸至污水囊<sup>(7)</sup>內，如此依序操作使用，清水箱<sup>(6)</sup>內之液位逐漸降低，而污水則逐漸流至污水囊<sup>(7)</sup>內，使污水囊<sup>(7)</sup>往外擴大膨脹，俟清水用盡或

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污水注滿時，再停止操作，並重新注入清水及排盡污水，方能繼續操作。

清洗若係欲進行打蠟，即停止使用抽吸裝置⑧，並將水性蠟注入清水箱⑥內，而每一刷盤⑬之刷毛端則貼置一厚絨布⑭，則將塞盤⑮之凸柱穿入厚絨布⑭中心孔，並壓擠入固定盤⑪之中空導筒⑫開口內，藉其彈性嵌夾效果以防止厚絨布⑭掉落，厚絨布⑭本身則因刷盤⑬刷毛端之插刺壓抵而能一體旋轉，俾以進行打蠟作業者。

綜合以上所述，本創作「具吸塵洗地吸水打蠟功能清潔機」確能同時進行吸塵、洗地及吸水作業，亦可適時單獨實施打蠟作業，而其整體吸塵、吸水效果皆顯著提高，並且能大幅度縮減習用清、污水箱之所佔空間，理已確具實用性，亦符合專利申請要件，爰依法提出申請。

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## 六 申請專利範圍

1. 一種具吸塵洗地吸水打蠟功能清潔機，係包括：
- 一機座，為一長方形板狀；
  - 一機殼，開分為內部中空之上、下機殼，下機殼套置鎖設於機座上，而上機殼後端製有往外突出之導管；
  - 一驅動裝置，其具有減速箱之馬達係鎖設於下機殼之頂面中央處，而輸出軸則穿入下機殼內，並結合一螺旋齒輪，在螺旋齒輪左右側各啮合一螺旋齒輪，彼等之轉軸皆貫穿機座，並以軸承相樞設；
  - 三組清潔器具，其固定盤各套固於轉軸底端，再各套設一具有刷毛之刷盤；
  - 一握手，係為中空狀態，並與上機殼之導管相接合，在握手表線設有另一中空管，以供馬達之電源線穿入並裝設開關；
  - 一清水箱，其頂緣設有清水入口及污水入口，底緣則製有清水出口、污水出口，並於污水出口管上裝設一球型閥；
  - 一污水管，其上下端皆為開口狀態；
  - 一抽吸裝置，其風扇馬達之環形托架鎖設於清水箱之污水入口處，而環形托架周側接合之軟管則接至握手頂端開口處之控制閥；
  - 一供水裝置，其泵浦鎖設於清水箱之清水出口端，而泵浦出口端之供水軟管則穿入握手之中空管，並接合一控制閥，再進入上、下機殼內且分歧為兩供水管，而各自機

座之內開孔往下穿出；

其特點在於：該上機殼內部中央處設製一體之圓筒形內殼，以單設於馬達周側，而上機殼與圓筒形內殼之底端緣皆結合有軟質橡膠環，使上、下機殼鎖合處確實緊密，既上機殼內壁與圓筒形內殼外壁之間形成一抽吸室，而上機殼之導管即與抽吸室相接通，在導管表緣一體之中空管則貫穿上機殼之殼壁，並與圓筒形內殼相接通，以作為馬達電源線及供水軟管之管路；在機座底面前後處各設置一道左右向往下延伸之吸入管，吸入管之下半段前後壁各製有等間距之縱向凸條，而機座於兩吸入管中間之相對處各設製一圓孔，以配合下機殼相對處往下延伸之直管暨其底端所結合之軟質橡膠環，而與抽吸室相接通，將塵屑、污水抽吸至污水槽內，污水槽係置入於清水箱內，其上下端開口製有向外突出之凸緣，以各黏貼膠著於清水箱之污水入、出口周側；該清潔器具之固定盤中央處設有往下延伸之中空導筒，而中空導筒之下半段周緣製成突出之球面，並切製數道縱向槽溝，以將刷盤中心孔壓進套設於中空導筒之上半段，而刷盤頂面徑向相對處之兩凹溝則與固定盤相對處之長條形凸緣相互嵌合，使刷盤能與轉軸一體旋轉，而內貫穿機座之供水管出口端則對準三組刷盤所形成兩交接處之前方，以噴送清水，藉能同時進行吸塵、洗地及吸水作業。

2. 如申請專利範圍第1項所述之具吸塵洗地吸水打蠅功能清潔機，其中，該兩吸入管下半段之前後壁係垂直平

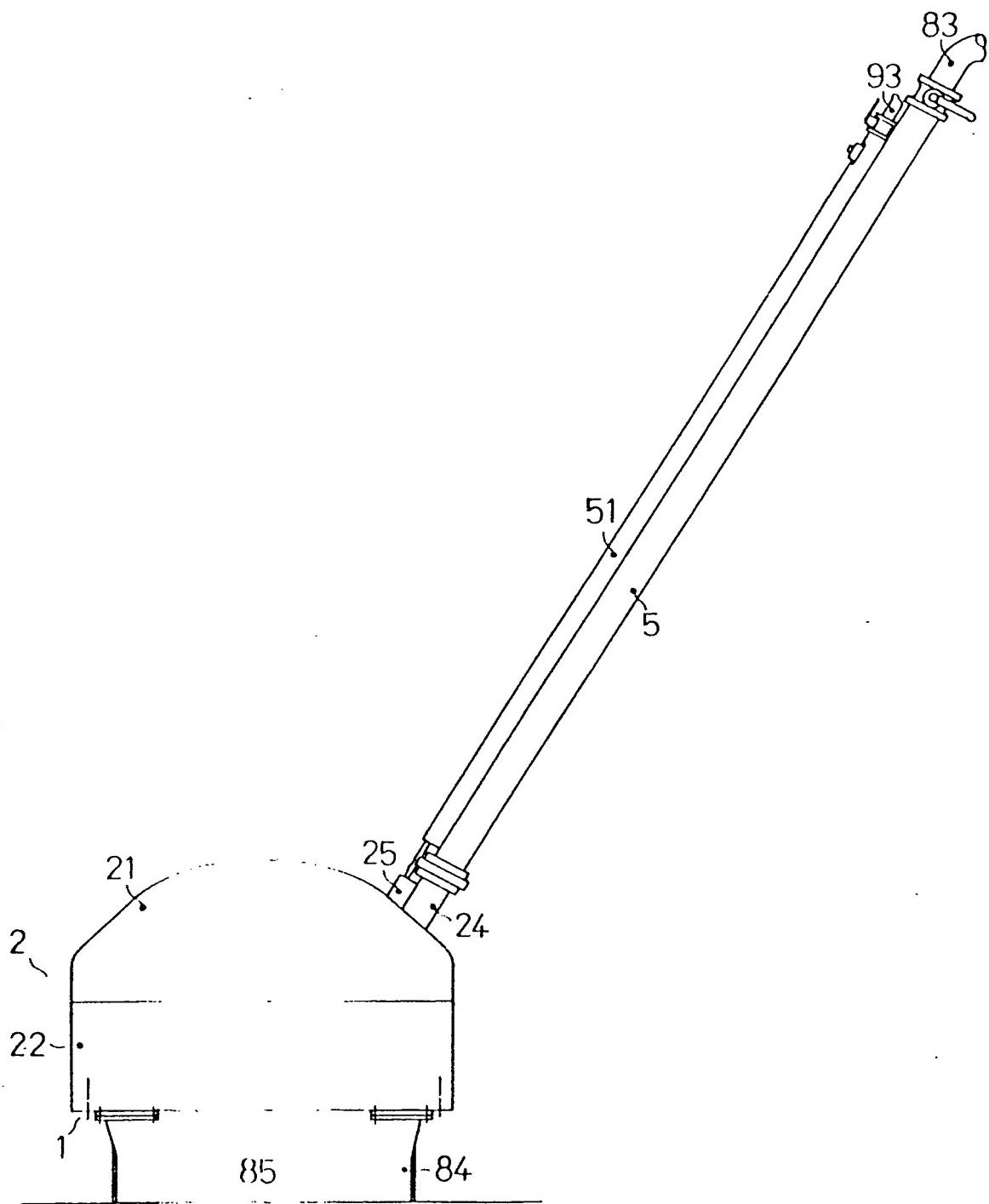
行狀態，而上半段則漸次往上增寬，再往外水平延伸，俾以盤板抵附並用鎖固元件以鎖設於機座底面，該兩吸入管採用軟性橡膠製成，並且於兩吸入管左右端各以長條形之肋片加以伸縮，而將三組刷盤予以包圍者。

3. 如中附專利範圖第1項所述之具吸塵洗地吸水打蠟功能清潔機，其中，該污水囊採用PE塑膠一體製成，而污水囊周邊成連續之大型皺摺狀，以能彈性伸縮、膨脹者。

4. 如中附專利範圖第1項所述之具吸塵洗地吸水打蠟功能清潔機，其中，該清潔器具之刷毛端能貼置一厚絨布，再將其側面之凸柱穿入厚絨布中心孔，接著壓擠入固定盤之中空導筒開口內，以進行打蠟作業者。

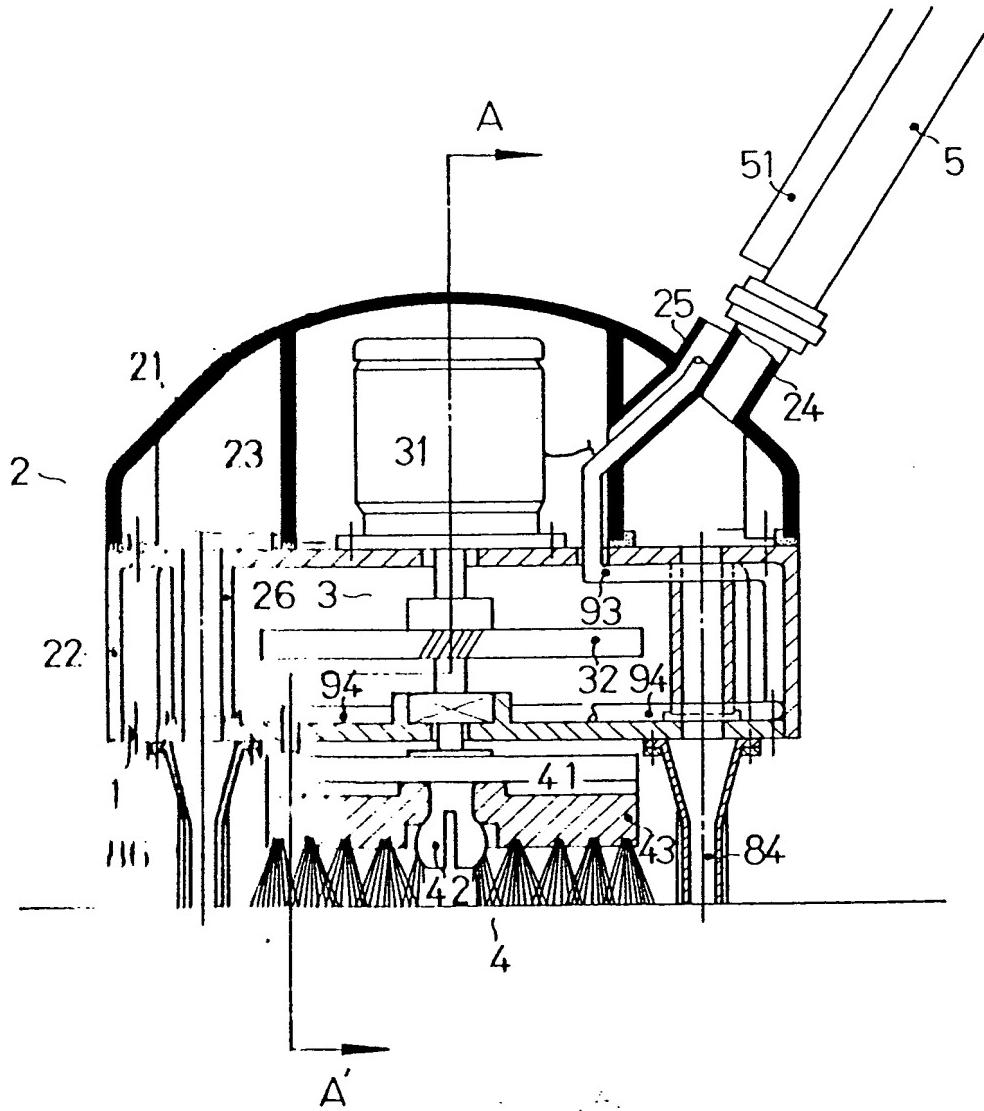
裝打線

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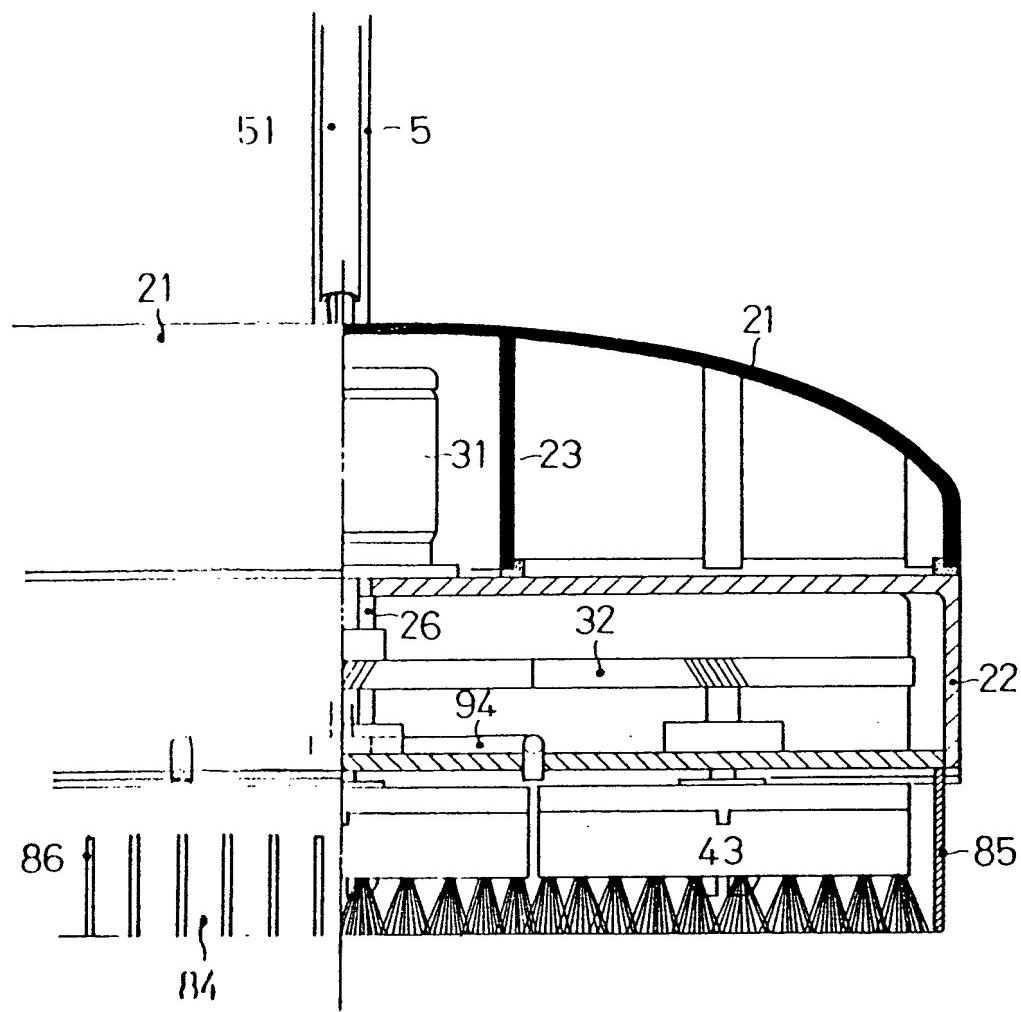
第 1 圖

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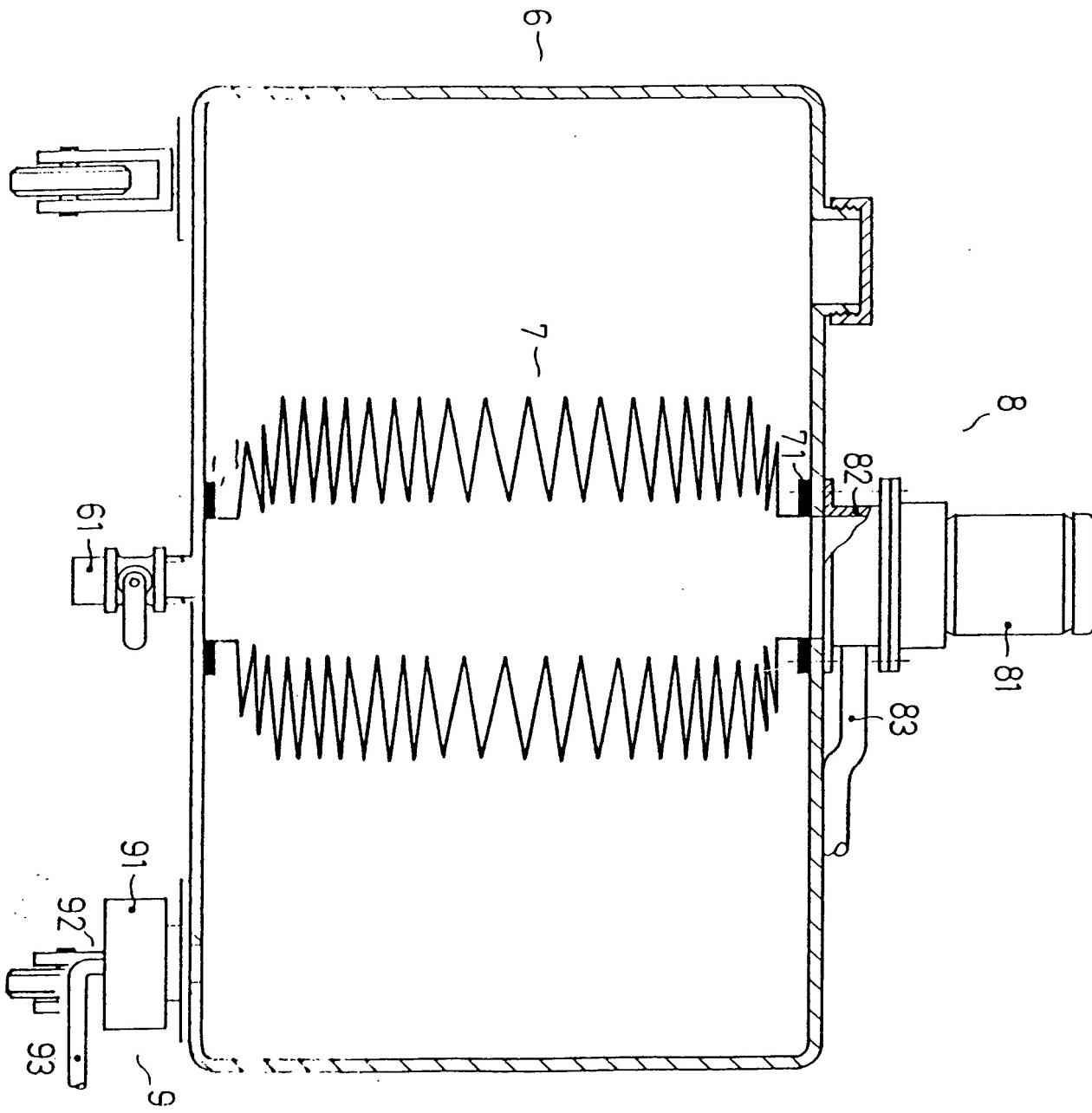
第 2 圖

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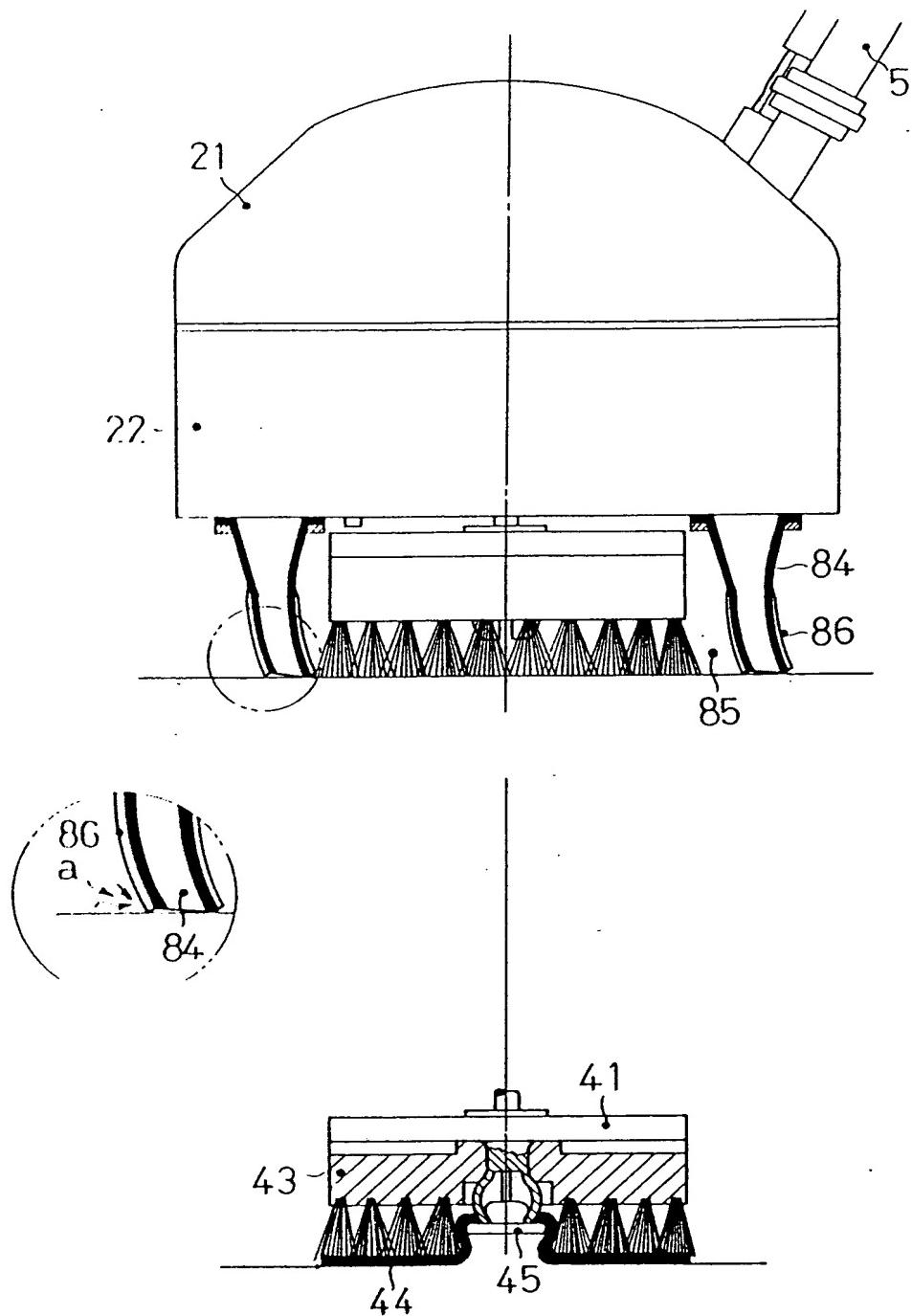


第 3 圖

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第 5 圖